SEQUENCE LISTING

<110> Britton, Warwick
      Demangel, Caroline

<120> Compositions and Methods for Targeting
   Antigen-Presenting Cells With Antibody Single-Chain Variable
   Region Fragments

<130> 13311.1002U

<160> 18

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 729
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleotide sequence encoding fusion protein

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ccaacgaagg gtctggagtg ggtcgcatcc attagtccta gtggtggtac cacttactat   180
cgagactccg tgaagggccg attcactttc tccagggata atgcaaaaag caccctatat   240
ctgcaaatgg acagtctgag gtctgaggac acggccactt attactgcaa cagatcgggg   300
cacgggtata cctactttga ttactggggc caagggacca cggtcaccgt ctcctcaggt   360
ggaggtggtt caggcggagg tggatccgga ggcggtggat cggacatcca gatgactcag   420
tctccatcat cactgcctgc ctccctggga gacagagtca ctatccattg tcaggccagt   480
caggacatta gcaattattt aacctggtac cagcagaaac agggaaagc tcctaagctc   540
ctgatctatg aaacaaataa attggcagat ggagtcccat caaggttcag tggcagtggt   600
tctgggagag attattcttt cactatcagc agcctggaat ctgaagatgt tggatcttat   660
tactgtcaac attattatga ctatcctcgg acgttcggac ctgggaccaa gctggaaata   720
aaacgggcg   729

<210> 2
<211> 243
<212> PRT
<213> Artificial sequence

<220>
<223> Fusion protein

<400> 2
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Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Asn Ser
            20   25   30
Gly Met His Trp Ile Arg Gln Ser Pro Thr Lys Gly Leu Glu Trp Val
        35   40   45
Ala Ser Ile Ser Pro Ser Gly Gly Thr Thr Tyr Tyr Arg Asp Ser Val
    50   55   60
Lys Gly Arg Phe Thr Phe Ser Arg Asp Asn Ala Lys Ser Thr Leu Tyr

1

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65                      70                      75                      80
Leu Gln Met Asp Ser Leu Arg Ser Glu Asp Thr Ala Thr Tyr Tyr Cys
                85                      90                      95
Asn Arg Ser Gly His Gly Tyr Thr Tyr Phe Asp Tyr Trp Gly Gln Gly
            100                     105                     110
Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly
            115                     120                     125
Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser
        130                     135                     140
Leu Pro Ala Ser Leu Gly Asp Arg Val Thr Ile His Cys Gln Ala Ser
145                     150                     155                     160
Gln Asp Ile Ser Asn Tyr Leu Thr Trp Tyr Gln Gln Lys Pro Gly Lys
                165                     170                     175
Ala Pro Lys Leu Leu Ile Tyr Glu Thr Asn Lys Leu Ala Asp Gly Val
            180                     185                     190
Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Arg Asp Tyr Ser Phe Thr
            195                     200                     205
Ile Ser Ser Leu Glu Ser Glu Asp Val Gly Ser Tyr Tyr Cys Gln His
        210                     215                     220
Tyr Tyr Asp Tyr Pro Arg Thr Phe Gly Pro Gly Thr Lys Leu Glu Ile
225                     230                     235                     240
Lys Arg Ala

<210> 3
<211> 1623
<212> DNA
<213> Artificial Sequence

<220>
<223> Nucleotide sequence encoding fusion protein

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ccaacgaagg gtctggagtg ggtcgcatcc attagtccta gtggtggtac cacttactat     180
cgagactccg tgaagggccg attcactttc tccagggata atgcaaaaag caccctatat     240
ctgcaaatgg acagtctgag gtctgaggac acggccactt attactgcaa cagatcgggg     300
cacgggtata cctactttga ttactggggc caagggacca cggtcaccgt ctcctcaggt     360
ggaggtggtt caggcggagg tggatccgga ggcggtggat cggacatcca gatgactcag     420
tctccatcat cactgcctgc ctccctggga gacagagtca ctatccattg tcaggccagt     480
caggacatta gcaattattt aacctggtac agcagaaac  cagggaaagc tcctaagctc     540
ctgatctatg aaacaaataa attggcagat ggagtcccat caaggttcag tggcagtggt     600
tctgggagag attattcttt cactatcagc agcctggaat ctgaagatgt tggatcttat     660
tactgtcaac attattatga ctatcctcgg acgttcggac tgggaccaa  gctggaaata     720
aaacggggat atccatcaca ctggcggccg ctcgagcatg catctagatt ctcccggccg     780
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gacccggcat gggagcgcaa cgaccctacg cagcagatcc ccaagctggt cgcaaacaac    1380
acccggctat gggtttattg cgggaacggc accccgaacg agttgggcgg tgccaacata    1440
cccgccgagt tcttggagaa cttcgttcgt agcagcaacc tgaagttcca ggatgcgtac    1500
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2

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aacgccgcgg gcgggcacaa cgccgtgttc aacttcccgc ccaacggcac gcacagctgg    1560
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ggc                                                                  1623


<210> 4
<211> 726
<212> DNA
<213> Artificial sequence

<220>
<223> Nucleotide sequence encoding fusion protein

<400> 4
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cctgaacagg gacttgagtg gattggatgg attttcctg gagagggggag tactgaatac    180
aatgagaagt tcaagggcag ggccacactg agtgtagaca gtcctccag cacagcctat     240
atggagctca ctaggctgac atctgaggac tctgctgtct atttctgtgc tagaggggac    300
tactataggc gctactttga cttgtggggc caagggacca cggtcaccgt ctcctcaggt     360
ggaggcggtt caggcggagg tggatccggc ggtggcggat cggacatcca gatgactcag    420
tctccatcat ttctgtctac atctcttgga aacagcatca ccatcacttg ccatgccagt     480
cagaacatca agggttggtt agcctggtac caacaaaagt cagggaatgc tcctcaactg     540
ttgatttata aggcatctag cctgcaatca ggggttccat caagattcag tggcagtgga     600
tctggaacag attatatttt cactatcagc aacctacagc ctgaagatat tgccacttat     660
tactgtcagc attatcaaag ctttccgtgg acgttcggtg agggaccaa gctggaaata     720
aaacgg                                                               726


<210> 5
<211> 119
<212> PRT
<213> Rat

<400> 5
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            20                  25                  30
Asp Ile Asp Trp Val Arg Gln Thr Pro Glu Gln Gly Leu Glu Trp Ile
         35                  40                  45
Gly Trp Ile Phe Pro Gly Glu Gly Ser Thr Glu Tyr Asn Glu Lys Phe
     50                  55                  60
Lys Gly Arg Ala Thr Leu Ser Val Asp Lys Ser Ser Ser Thr Ala Tyr
65                  70                  75                  80
Met Glu Leu Thr Arg Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys
                85                  90                  95
Ala Arg Gly Asp Tyr Tyr Arg Arg Tyr Phe Asp Leu Trp Gly Gln Gly
            100                 105                 110
Thr Thr Val Thr Val Ser Ser
         115


<210> 6
<211> 110
<212> PRT
<213> Rat

<400> 6
Asp Ile Gln Met Thr Gln Ser Pro Ser Phe Leu Ser Thr Ser Leu Gly
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3

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Leu Ala Trp Tyr Gln Gln Lys Ser Gly Asn Ala Pro Gln Leu Leu Ile
        35                      40                      45
Tyr Lys Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
    50                      55                      60
Ser Gly Ser Gly Thr Asp Tyr Ile Phe Thr Ile Ser Asn Leu Gln Pro
65                      70                      75                      80
Glu Asp Ile Ala Thr Tyr Tyr Cys Gln His Tyr Gln Ser Phe Pro Trp
                85                      90                      95
Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala Ala
                100                     105                     110
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<210> 7
<211> 261
<212> PRT
<213> Artificial sequence

<220>
<223> Fusion protein

<400> 7
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            20                      25                      30
Pro Gly Ala Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Ile Phe
        35                      40                      45
Thr Ser Tyr Asp Ile Asp Trp Val Arg Gln Thr Pro Glu Gln Gly Leu
    50                      55                      60
Glu Trp Ile Gly Trp Ile Phe Pro Gly Glu Gly Ser Thr Glu Tyr Asn
65                      70                      75                      80
Glu Lys Phe Lys Gly Arg Ala Thr Leu Ser Val Asp Lys Ser Ser Ser
                85                      90                      95
Thr Ala Tyr Met Glu Leu Thr Arg Leu Thr Ser Glu Asp Ser Ala Val
                100                     105                     110
Tyr Phe Cys Ala Arg Gly Asp Tyr Tyr Arg Arg Tyr Phe Asp Leu Trp
            115                     120                     125
Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly
            130                     135                     140
Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Gln Met Thr Gln Ser
145                     150                     155                     160
Pro Ser Phe Leu Ser Thr Ser Leu Gly Asn Ser Ile Thr Ile Thr Cys
                165                     170                     175
His Ala Ser Gln Asn Ile Lys Gly Trp Leu Ala Trp Tyr Gln Gln Lys
                180                     185                     190
Ser Gly Asn Ala Pro Gln Leu Leu Ile Tyr Lys Ala Ser Ser Leu Gln
                195                     200                     205
Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Tyr
    210                     215                     220
Ile Phe Thr Ile Ser Asn Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr
225                     230                     235                     240
Cys Gln His Tyr Gln Ser Phe Pro Trp Thr Phe Gly Gly Gly Thr Lys
                245                     250                     255
Leu Glu Ile Lys Arg
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4

<210> 8
<211> 1623
<212> DNA
<213> Artificial Sequence

<220>
<223> Nucleotide sequence encoding fusion protein

<400> 8
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cctgaacagg gacttgagtg gattggatgg attttttcctg gagaggggag tactgaatac     180
aatgagaagt tcaagggcag ggccacactg agtgtagaca agtcctccag cacagcctat     240
atggagctca ctaggctgac atctgaggac tctgctgtct atttctgtgc tagaggggac     300
tactataggc gctactttga cttgtggggc caagggacca cggtcaccgt ctcctcaggt     360
ggaggcggtt caggcggagg tggatccggc ggtggcggat cggacatcca gatgactcag     420
tctccatcat ttctgtctac atctcttgga aacagcatca ccatcacttg ccatgccagt     480
cagaacatca agggttggtt agcctggtac caacaaaagt cagggaatgc tcctcaactg     540
ttgatttata aggcatctag cctgcaatca ggggttccat caagattcag tggcagtgga     600
tctggaacag attatatttt cactatcagc aacctacagc ctgaagatat tgccacttat     660
tactgtcagc attatcaaag ctttccgtgg acgttcggtg gagggaccaa gctggaaata     720
aaacggggat atccatcaca ctggcggccg ctcgagcatg catctagatt ctcccggccg     780
gggctgccgg tcgagtacct gcaggtgccg tcgccgtcga tgggccgcga catcaaggtt     840
cagttccaga gcggtgggaa caactcacct gcggtttatc tgctcgacgg cctgcgcgcc     900
caagacgact acaacggctg ggatatcaac accccggcgt tcgagtggta ctaccagtcg     960
ggactgtcga tagtcatgcc ggtcggcggg cagtccagct tctacagcga ctggtacagc    1020
ccggcctgcg gtaaggctgg ctgccagact tacaagtggg aaaccttcct gaccagcgag    1080
ctgccgcaat ggttgtccgc caacagggcc gtgaagccca ccggcagcgc tgcaatcggc    1140
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aacgccgcgg cgggcacaa cgccgtgttc aacttcccgc ccaacggcac gcacagctgg    1560
gagtactggg gcgctcagct caacgccatg aagggtgacc tgcagagttc gttaggcgcc    1620
ggc                                                                  1623
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<210> 9
<211> 5446
<212> DNA
<213> Artificial Sequence

<220>
<223> Plasmid vector generated in a laboratory

<400> 9
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cgagcaaaat ttaagctaca acaaggcaag gcttgaccga caattgcatg aagaatctgc     180
ttagggttag gcgttttgcg ctgcttcgcg atgtacgggc cagatatacg cgttgacatt     240
gattattgac tagttattaa tagtaatcaa ttacggggtc attagttcat agcccatata     300
tggagttccg cgttacataa cttacggtaa atggcccgcc tggctgaccg cccaacgacc     360
cccgcccatt gacgtcaata atgacgtatg ttcccatagt aacgccaata gggactttcc     420
attgacgtca atgggtggac tatttacggt aaactgccca cttggcagta catcaagtgt     480
atcatatgcc aagtacgccc cctattgacg tcaatgacgg taaatggccc gcctggcatt     540
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cggtgctaca gagttcttga agtggtggcc taactacggc tacactagaa ggacagtatt    4140
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aagggcgaca cggaaatgtt gaatactcat actcttcctt tttcaatatt attgaagcat    5340
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<210> 10
<211> 14
<212> PRT
<213> Articifical sequence

<220>
<223> Generated in a laboratory from synthetic material

<400> 10
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Gly Tyr Pro Ser His Trp Arg Pro Leu Glu His Ala Ser Arg
 1               5                   10
```

<210> 11
<211> 42
<212> DNA
<213> Artificial sequence

<220>
<223> Generated in a laboratory from synthetic material

<400> 11
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ggatatccat cacactggcg gccgctcgag catgcatcta ga                          42
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<210> 12
<211> 5538
<212> DNA
<213> Artificial Sequence

<220>
<223> Plasmid vector generated in a laboratory

<400> 12
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aacggctccg cccactatta atgaaattaa aaattccaat tttaaaaaac gcagcaagag     60
aaacatttgt atgaaagaat gcgtagaagg aaagaaaaat gtcgtcgaca tgctgaacaa    120
caagattaat atgcctccgt gtataaaaaa aatattgaac gatttgaaag aaaacaatgt    180
accgcgcggc ggtatgtaca ggaagaggtt tatactaaac tgttacattg caaacgtggt    240
ttcgtgtgcc aagtgtgaaa accgatgttt aatcaaggct ctgacgcatt tctacaacca    300
cgactccaag tgtgtgggtg aagtcatgca tcttttaatc aaatcccaag atgtgtataa    360
accaccaaac tgccaaaaaa tgaaaactgt cgacaagctc tgtccgtttg ctggcaactg    420
caagggtctc aatcctattt gtaattattg aataataaaa caattataaa tgctaaattt    480
gttttttatt aacgatacaa accaaacgca acaagaacat ttgtagtatt atctataatt    540
gaaaacgcgt agttataatc gctgaggtaa tatttaaaat cattttcaaa tgattcacag    600
ttaatttgcg acaatataat tttattttca cataaactag acgccttgtc gtcttcttct    660
tcgtattcct tctctttttc attttctcc tcataaaaat taacatagtt attatcgtat    720
ccatatatgt atctatcgta tagagtaaat tttttgttgt cataaatata tatgtctttt    780
ttaatggggt gtatagtacc gctgcgcata gttttctgt aatttacaac agtgctattt    840
tctggtagtt cttcggagtg tgttgcttta attattaaat ttatataatc aatgaatttg    900
ggatcgtcgg ttttgtacaa tatgttgccg gcatagtacg cagcttcttc tagttcaatt    960
acaccatttt ttagcagcac cggattaaca taactttcca aaatgttgta cgaaccgtta   1020
aacaaaaaca gttcacctcc cttttctata ctattgtctg cgagcagttg tttgttgtta   1080
aaaataacag ccattgtaat gagacgcaca aactaatatc acaaactgga aatgtctatc   1140
aatatatagt tgctgatatc atggagataa ttaaaatgat aaccatctcg caaataaata   1200
agtattttac tgttttcgta acagttttgt aataaaaaaa cctataaata cggatccctg   1260
caggcctcga gttcgaatct agaagatctg gtaccgagct cgaattcccg ggcggccgct   1320
taattaattg atccgggtta ttagtacatt tattaagcgc tagattctgt gcgttgttga   1380
tttacagaca attgttgtac gtattttaat aattcattaa atttataatc tttagggtgg   1440
tatgttagag cgaaaatcaa atgattttca gcgtctttat atctgaattt aaatattaaa   1500
tcctcaatag atttgtaaaa taggtttcga ttagtttcaa acaagggttg tttttccgaa   1560
ccgatggctg gactatctaa tggattttcg ctcaacgcca caaaacttgc caaatcttgt   1620
agcagcaatc tagctttgtc gatattcgtt tgtgttttgt tttgtaataa aggttcgacg   1680
tcgttcaaaa tattatgcgc ttttgtattt ctttcatcac tgtcgttagt gtacaattga   1740
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ttaggccgat tatcgtcgtc gtcccaaccc tcgtcgttag aagttgcttc cgaagacgat   1860
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gtagttgagc tttttggaat tatttctgat tgcgggcgtt tttgggcggg tttcaatcta   1980
actgtgcccg attttaattc agacaacacg ttagaaagcg atggtgcagg cggtggtaac   2040
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ccgcacgccg ataacaagcc ttttcatttt tactacagca ttgtagtggc gagacacttc   2760
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tgatggttca cgtagtgggc catcgccctg atagacggtt tttcgccctt tgacgttgga   3120
gtccacgttc tttaatagtg gactcttgtt ccaaactgga acaacactca accctatctc   3180
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gctgatttaa caaaaattta acgcgaattt taacaaaata ttaacgttta caattttatg   3300
gtgcactctc agtacaatct gctctgatgc cgcatagtta agccagcccc gacacccgcc   3360
```

8

```
aacacccgct gacgcgccct gacgggcttg tctgctcccg gcatccgctt acagacaagc      3420
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gagacgaaag ggcctcgtga tacgcctatt tttataggtt aatgtcatga taataatggt      3540
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tgctgaagat cagttgggtg cacgagtggg ttacatcgaa ctggatctca acagcggtaa      3840
gatccttgag agttttcgcc ccgaagaacg ttttccaatg atgagcactt ttaaagttct      3900
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acactattct cagaatgact tggttgagta ctcaccagtc acagaaaagc atcttacgga      4020
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caacttactt ctgacaacga tcggaggacc gaaggagcta accgcttttt tgcacaacat      4140
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cggcagggtc ggaacaggag agcgcacgag ggagcttcca gggggaaacg cctggtatct      5220
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aggggggcgg agcctatgga aaaacgccag caacgcggcc tttttacggt tcctggcctt      5340
ttgctggcct tttgctcaca tgttctttcc tgcgttatcc cctgattctg tggataaccg      5400
tattaccgcc tttgagtgag ctgataccgc tcgccgcagc cgaacgaccg agcgcagcga      5460
gtcagtgagc gaggaagcgg aagagcgccc aatacgcaaa ccgcctctcc ccgcgcgttg      5520
gccgattcat taatgcag                                                    5538
```

<210> 13
<211> 978
<212> DNA
<213> Mycobacterium tuberculosis

<400> 13
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atgacagacg tgagccgaaa gattcgagct tggggacgcc gattgatgat cggcacggca       60
gcggctgtag tccttccggg cctggtgggg cttgccggcg gagcggcaac cgcgggcgcg      120
ttctcccggc cggggctgcc ggtcgagtac ctgcaggtgc cgtcgccgtc gatgggccgc      180
gacatcaagg ttcagttcca gagcggtggg aacaactcac ctgcggttta tctgctcgac      240
ggcctgcgcg cccaagacga ctacaacggc tgggatatca acacccggc gttcgagtgg      300
tactaccagt cgggactgtc gatagtcatg ccggtcggcg ggcagtccag cttctacagc      360
gactggtaca gcccggcctg cggtaaggct ggctgccaga cttacaagtg ggaaaccttc      420
ctgaccagcg agctgccgca atggttgtcc gccaacaggg ccgtgaagcc caccggcagc      480
gctgcaatcg gcttgtcgat ggccggctcg tcggcaatga tcttggccgc ctaccacccc      540
cagcagttca tctacgccgg ctcgctgtcg ccctgctgg accctctca ggggatgggg      600
cctagcctga tcggcctcgc gatgggtgac gccggcggtt acaaggccgc agacatgtgg      660
ggtccctcga gtgaccggc atgggagcgc aacgaccta cgcagcagat ccccaagctg      720
gtcgcaaaca acacccggct atgggtttat tgcgggaacg gcaccccgaa cgagttgggc      780
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```
ggtgccaaca tacccgccga gttcttggag aacttcgttc gtagcagcaa cctgaagttc      840
caggatgcgt acaacgccgc gggcgggcac aacgccgtgt tcaacttccc gcccaacggc      900
acgcacagct gggagtactg gggcgctcag ctcaacgcca tgaagggtga cctgcagagt      960
tcgttaggcg ccggctga                                                    978
```

<210> 14
<211> 325
<212> PRT
<213> Mycobacterium tuberculosis

<400> 14

```
Met Thr Asp Val Ser Arg Lys Ile Arg Ala Trp Gly Arg Arg Leu Met
 1               5                   10                  15
Ile Gly Thr Ala Ala Ala Val Val Leu Pro Gly Leu Val Gly Leu Ala
            20                  25                  30
Gly Gly Ala Ala Thr Ala Gly Ala Phe Ser Arg Pro Gly Leu Pro Val
        35                  40                  45
Glu Tyr Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val
    50                  55                  60
Gln Phe Gln Ser Gly Gly Asn Asn Ser Pro Ala Val Tyr Leu Leu Asp
65                  70                  75                  80
Gly Leu Arg Ala Gln Asp Asp Tyr Asn Gly Trp Asp Ile Asn Thr Pro
                85                  90                  95
Ala Phe Glu Trp Tyr Tyr Gln Ser Gly Leu Ser Ile Val Met Pro Val
            100                 105                 110
Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Ser Pro Ala Cys Gly
        115                 120                 125
Lys Ala Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu
    130                 135                 140
Leu Pro Gln Trp Leu Ser Ala Asn Arg Ala Val Lys Pro Thr Gly Ser
145                 150                 155                 160
Ala Ala Ile Gly Leu Ser Met Ala Gly Ser Ser Ala Met Ile Leu Ala
                165                 170                 175
Ala Tyr His Pro Gln Gln Phe Ile Tyr Ala Gly Ser Leu Ser Ala Leu
            180                 185                 190
Leu Asp Pro Ser Gln Gly Met Gly Pro Ser Leu Ile Gly Leu Ala Met
            195                 200                 205
Gly Asp Ala Gly Gly Tyr Lys Ala Ala Asp Met Trp Gly Pro Ser Ser
210                 215                 220
Asp Pro Ala Trp Glu Arg Asn Asp Pro Thr Gln Gln Ile Pro Lys Leu
225                 230                 235                 240
Val Ala Asn Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro
                245                 250                 255
Asn Glu Leu Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe
            260                 265                 270
Val Arg Ser Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly
            275                 280                 285
Gly His Asn Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp
    290                 295                 300
Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser
305                 310                 315                 320
Ser Leu Gly Ala Gly
                325
```

<210> 15
<211> 826
<212> DNA
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<213> Mycobacterium tuberculosis

<400> 15
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tctgctagct tgagtctggt caggcatcgt cgtcagcagc gcgatgcccc tatgtttgtc   60
gtcgactcag atatcgcggc aatccaatct cccgcctgcg ccggcggtgc tgcaaactac   120
tcccggagga atttcgacgt gcgcatcaag atcttcatgc tggtcacggc tgtcgttttg   180
ctctgttgtt cgggtgtcgc cacggccgcg cccaagacct actgcgagga gttgaaaggc   240
accgataccg gccaggcgtg ccagattcaa atgtccgacc cggcctacaa catcaacatc   300
agcctgccca gttactaccc cgaccagaag tcgctggaaa attacatcgc ccagacgcgc   360
gacaagttcc tcagcgcggc cacatcgtcc actccacgcg aagccccta cgaattgaat   420
atcacctcgg ccacatacca gtccgcgata ccaccgcgtg gtacgcaggc cgtggtgctc   480
aaggtctacc agaacgccgg cggcacgcac ccaacgacca cgtacaaggc cttcgattgg   540
gaccaggcct atcgcaagcc aatcacctat gacacgctgt ggcaggctga caccgatccg   600
ctgccagtcg tcttccccat tgtgcaaggt gaactgagca agcagaccgg acaacaggta   660
tcgatagcgc cgaatgccgg cttggacccg gtgaattatc agaacttcgc agtcacgaac   720
gacggggtga ttttcttctt caacccgggg gagttgctgc ccgaagcagc cggcccaacc   780
caggtattgg tcccacgttc cgcgatcgac tcgatgctgg cctaga   826
```

<210> 16
<211> 228
<212> PRT
<213> Mycobacterium tuberculosis

<400> 16
```
Met Arg Ile Lys Ile Phe Met Leu Val Thr Ala Val Val Leu Leu Cys
  1   5   10   15
Cys Ser Gly Val Ala Thr Ala Ala Pro Lys Thr Tyr Cys Glu Glu Leu
             20   25   30
Lys Gly Thr Asp Thr Gly Gln Ala Cys Gln Ile Gln Met Ser Asp Pro
         35   40   45
Ala Tyr Asn Ile Asn Ile Ser Leu Pro Ser Tyr Tyr Pro Asp Gln Lys
     50   55   60
Ser Leu Glu Asn Tyr Ile Ala Gln Thr Arg Asp Lys Phe Leu Ser Ala
65   70   75   80
Ala Thr Ser Ser Thr Pro Arg Glu Ala Pro Tyr Glu Leu Asn Ile Thr
                 85   90   95
Ser Ala Thr Tyr Gln Ser Ala Ile Pro Pro Arg Gly Thr Gln Ala Val
             100   105   110
Val Leu Lys Val Tyr Gln Asn Ala Gly Gly Thr His Pro Thr Thr Thr
         115   120   125
Tyr Lys Ala Phe Asp Trp Asp Gln Ala Tyr Arg Lys Pro Ile Thr Tyr
     130   135   140
Asp Thr Leu Trp Gln Ala Asp Thr Asp Pro Leu Pro Val Val Phe Pro
145   150   155   160
Ile Val Gln Gly Glu Leu Ser Lys Gln Thr Gly Gln Gln Val Ser Ile
                 165   170   175
Ala Pro Asn Ala Gly Leu Asp Pro Val Asn Tyr Gln Asn Phe Ala Val
             180   185   190
Thr Asn Asp Gly Val Ile Phe Phe Phe Asn Pro Gly Glu Leu Leu Pro
         195   200   205
Glu Ala Ala Gly Pro Thr Gln Val Leu Val Pro Arg Ser Ala Ile Asp
     210   215   220
Ser Met Leu Ala
225
```

<210> 17
<211> 315

```
<212> DNA
<213> Mycobacterium tuberculosis

<400> 17
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cgcaatccag ggaaatgtca cgtccattca ttccctcctt gacgagggga agcagtccct     120
gaccaagctc gcagcggcct ggggcggtag cggttcggag gcgtaccagg gtgtccagca     180
aaaatgggac gccacggcta ccgagctgaa caacgcgctg cagaacctgg cgcggacgat     240
cagcgaagcc ggtcaggcaa tggcttcgac cgaaggcaac gtcactggga tgttcgcata     300
ggaagcttgg gaatc                                                      315


<210> 18
<211> 95
<212> PRT
<213> Mycobacterium tuberculosis

<400> 18
Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile Glu Ala Ala Ala Ser
 1               5                  10                  15
Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser Leu Leu Asp Glu Gly
            20                  25                  30
Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp Gly Gly Ser Gly Ser
         35                  40                  45
Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp Ala Thr Ala Thr Glu
    50                  55                  60
Leu Asn Asn Ala Leu Gln Asn Leu Ala Arg Thr Ile Ser Glu Ala Gly
65                  70                  75                  80
Gln Ala Met Ala Ser Thr Glu Gly Asn Val Thr Gly Met Phe Ala
                85                  90                  95
```